

Abstract

SUCTION AND DIRECTIONAL IRRIGATION APPARATUS

A hand-held directional irrigation tube and a suction tube surgical instrument includes a finger or thumb operated aperture on the suction tube communicating with the lumen thereof that serves to selectively by-pass and connect the suction pump with the surgical site and the irrigation tube being removably supported in a sleeve attached to the suction tube that includes a gear-like member having circumferentially spaced valleys or slots attached to the sleeve cooperating with a projection attached to the irrigation tube so that the surgeon can slide the irrigation tube to disengage the projection and rotate it and re-insert it into another slot in the gear-like member to re-direct the spray of irrigation fluid egressing from the irrigation tube to different locations in the surgical site. The projection member includes a shoulder that abuts against the end of the gear-like member to assure that the end of the irrigation tube is above the distal end of the suction tube so as not to interfere with the irrigation fluid being discharged there from.

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rest his finger or thumb on or in the vicinity of the orifice 24.

The irrigation tube 14 also includes fitting 30 at the proximate end 32 of the irrigation tube 14 which similar to the fitting 18 serves to accommodate a hose or the like (not shown) connected to the irrigation fluid source (not shown). Irrigation tube is retractable and removable and is supported in sleeve 34 which, in turn, is affixed to the outer surface of suction tube 12. The irrigation tube 14 carries a ring-like member 36 which carries a downwardly (in the direction of the distal end) projecting cylindrical rod 38. Affixed to or made integral with sleeve 34 is the gear-like ring member 40 that includes sinusoidally configured hills 42 and valleys 44 and the valleys 44 complement the rod 38 so that the rod 38 fits into these valleys as will be described in more detail hereinbelow.

The discharge aperture 46 at the distal end 48 of the irrigation tube 14 communicates with the irrigation lumen 27 and is located at the side surface thereof spaced from the end 50. ^{The means to} To change the direction of the jet stream egressing from the discharge aperture 46, the tube 14 is lifted in the direction toward the proximate end 32 to pass the end 41 of the gear-like member 40 and then, rotated to fit into any of the other valleys 44 of the gear-like member 40.

The design of this suction and directional irrigation apparatus locates the distal end 22 of the suction tube 12 to protrude beyond the distal end 48 of the irrigation tube 14. The distance of separation of the ends is determined by the shoulder 60 of the ring-like member 36 that abuts against the end face 62 of the gear-like member 40.